SCIENCE IN THE VEDAS

By

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INTRODUCTION

The Sanskrit Vishwa Parishad (World Academy of Sanskrit) was founded at Prabhas Patan (Somnath) on May II, 1951 with Rashtrapati Dr Rajendra Prasad as President and the illustrious Shri K M Munshi as Chairman Inter alia its objects are

(i) To promote or facilitate or carry on research in Indology and other allied subjects

(ii) To publish works journals and bulletins

(iii) And to do all such things as may be necessary accidental or conducive to the attainment of the above objects

Accordingly as Honorary Joint General Secretary of the the S V Parishad I welcome the opportunity of editing this booklet ' Science in the Vedas, 'so scholarly and so arduously prepared by Shri Hans Raj who is already known to the Sanskritists as compiler of वैदिक कोष. It is said that the goddess of learning unravels her secrets to him who is her true selfless desireless devotee (निष्काम अनन्य भक्त). Shri Hans Raj has worked for years on this topic patiently and with single devotion and has in the end succeeded to collect abundant evidence to elucidate that the following scientific truths regarding *electricity magnetism and formation of water etc* were too well known in the Vedic age

I There are two basic elements of which the material world is composed

II The two basic elements of the would are the units of two kinds of electricity (electrons and protons)

III The two basic elements of the world [i e the two kinds of electricity—negative (electron) and positive proton] are of different or opposite nature

IV They move round (revolve and rotate like the planets and the Sun respectively) in an atom

V They have a natural attraction for one another

VI Electricity is connected with magnetism and hence with north and south also

VII Unit of positive electricity (i e proton) is more massive (heavier) than the unit of negative electricity (i e electron)

VIII Water is formed by the combination of oxygen, hydrogen and electricity

Incidentally the learned author has made an attempt to give a scientific interpretation of Vedic deities and terms like अग्नि, सोम, मित्र, वरुण, अश्विनौ, अदिति, इन्द्र, इन्द्रस्य, 'हरी', उर्वशी, गन्धर्व नारद, अर्णोवग्नु,नमुचि कबन्ध,वातापि, वृत्र, पुरुरवस् , आयुस् ,and वसिष्ठ as well as पौराणिक शब्द like जलधर, ऐरावत, ऐरावण and ऐरावती । Thus interpreted Vedic mythology would cease to here anything to do with myths as interpreted in the west and acquire its true meaning of Figurative description of nature, which the Vedic seers must have intended and of which we are rightly proud of I do therefore sincerely congeratulate the author on this achievement of his

I have no doubt that this book will be standard with great interest and curiosity by all concerned Scholars are cordially invited to send their valuable comments regarding the same

The publishers too deserve the sincere thanks of all of us who have readily agreed not only to bring out this booklet, but also to publish four such books *annually* for the advancement of research in Indology *as a matter of duty*, even though it is not an economic proposition

In the end I have also to thank dear Jitendra Mohan Aggarwal for his arduous job of preparing the press copy of this booklet and also going through its proofs at great inconvenience to himself

Ludhiana
March 1, 19 6.

Hans Raj Aggarwal

Science in the Vedas

PART I.

Two kinds of Electricity, the ultimate components of the whole material world.

The modern scientific view is briefly given below :—

I There are two basic elements of which the material world is composed, i e electron (negative) and proton (positive) :— ...... making in all, 92 elements. These elements form all matter. Of them everything in the world,—the whole world itself—is composed [*The Marvels and Mysteries of Science*, by Ellison Hawks, P 197—198]

Matter... .. . The basic elements of matter are protons and electrons... , the various combinations of which make some 92 kinds of matter, the elements.. [Dictionary of Scientific Terms, by C. M Beadnell P. 124]

II. The two basic elements of the world are the units of two kinds of electricity —

> Electricity Fundamentally electrons and protons (q v) negative electricity —the electron, positive electricity —the proton
>
> (Ibid, P. 76)

All atoms, and hence all molecules, all elements, all chemical compounds and in fact the whole of matter are merely different combinations of positive protons and negative electrons. (Admiralty Handbook of Wireless Telegraphy page 18, 1931, by O. Murray)

Electron — a fundamental of the atoms Negative electricity. Syn negatron .. . .. when fixed by a proton inside the nucleus of an atom, it is termed as cementing electron, revolving in an orbit around the nucleus of the atom it is known as a planetary electron .. . ...

(Dictionary of Scientific Terms by C M Beadnell—p 177)

Proton Constituent of nucleus of all atoms Unit of positive electricity (Ibid page 161)

Neutron— One of the components of an atom
It is considered to be a proton and electron (positron plus negatron) which have combined and so lost their electro-magnetic fields (Ibid Page 136)

So far as I have enquired the prominence of two kinds of electricity in the structure of matter is still held according to the latest researches

III The two basic elements of the world i e the two kinds of electricity—negative (electron) and positive (proton) are of different or opposite nature —

It is important to realise that the electron is nothing but electricity

A proton is electricity the exact opposite of an electron *Due to some difference as yet unexplained this* has the effect of making the mass of the proton very much *greater than that of the electron so that the mass of an atom* is for all practical purposes the mass of the protons it contain
(Admiralty Handbook of Wireless Telegraphy, by Murray 1931 p 16-17)

Electricity therefore (whatever its real nature may *be) is of two opposite kinds positive and negative*
[Text book of Physics by J D Everette p 251]

IV They move round (revolve and rotate like the planets and the sun respectively) in an atom —

The electrons or negative charges revolve around as very small nucleus where all the positive electricity is concentrated This central nucleus called the proton bears the same relation to the whole atom as the sun bears to the solar system Electrons revolve around their nucleus in a somewhat similar way to that in which the earth revolves around the sun Their velocity is *terrific — 20 000 miles* a second or more. (Marvels and Mysteries of Science by E Hawks p 199)

Nucleus . The core of an atom consisting in the case of hydrogen of a single proton, and, in the case of other atoms, of two or more protons and fixed electrons (Dictionary of Scientific Terms, by C M Beadnell, p. 137)

The simplest atom — that of Hydrogen is a single proton with a single electron All the other (about 91) atoms consist of a central core of protons "cemented" to nuclear or fixed electrons (also under certain conditions neutrons and positrons q v) around which core they revolve in eccentric orbits ... planetary electrons (Ibid, p 21)

V They have a natural attraction for one another — Particles containing different charges of electricity have a natural attraction for each other, and similarly charged particles have a natural repulsion (Marvels and Mysteries of Science p. 330, by Ellison Hawks F R A S)

Electrons repel one another, but attract, and are attracted by protons. (Dictionary of Scientific Terms by Beadnell, p 77)

VI Electricity is connected with magnetism and hence with north and south also —

Magnetism —Steady motion of electrons in small orbits in practically, parallel planes. (Dictionary of Scientific Terms, by Beadnell p 122)

Magnet —Piece of iron or ore having the properties of attracting iron and of pointing north and south when suspended, natural (as in load stone) or induced by electric current [Concise Oxford Dictionary, Third Edition 1934]

According to Amphere's theory magnetism is caused by electric currents circulating round the molecules of magnetic bodies. [Royal Hand Book of Popular Science Page 124]

The magnetism can be produced by electricity (Electricity by W H Mc Cormick page 58)

The Earth may be regarded as a *large magnet*, the poles of which are near the geographical poles .... (Page 124).

The north pole is also called a positive and the south pole a negative pole .. ..Poles of the same kind repel one another, poles of opposite kind attract one another (Page 46)
(Royal Hand Book of Popular Science)

The **electricity** of the atmosphere manifests itself in other forms beside the lightning The most remarkable of these manifestations is the beautiful phenomenon known in **Northern** Hemisphere as the Aurora Borealis, and in the South Hemisphere as the Aurora Australis.
(Electricity by W H McCormick p 25/1).

Our knowledge of the **electric Ether waves** is still limited, and we do not know for certain how these waves travel from place to place, or exactly what happens to them on their journeys .. ... , Still more peculiar is the fact that it is easier to signal in a north or south direction than in an east and west direction (Page 199)'

VII Unit of positive electricity (i. e proton) is more massive (heavier) than the unit of negative electricity (i. e. electron) —

The proton is much smaller in volume, but 1845 times more massive (heavier) than the electron

(Dictionary of scientific Terms, by C. M Beadnell, p. 21)

Now, I shall try to show all of the above-noted seven scientific truths, from the ancient Vedic literature

I There are two basic elements of which the material world is composed

They are called by different names, viz Agnisomau (pair of Agni and Soma), Asvinau (the two Asvins), Mitra and Varuna, rayi and prana, brahma and ksatra, *the prefixes* 'a' and 'pra',

हरी —the 'Two Horses of Indra' and Aditi We shall deal with them one by one

Agni and Soma

Every thing in the world is related to them The whole world is Agni and Soma They are the ultimate limit पराकाष्ठा or basic components of matter The whole world is made up of Agni and Soma, (which are related to Brahmavarchas (brahman) and kshatra, respectively) :—

द्वयं वा इदं जगत् न तृतीयमस्ति । आर्द्रं चैव शुष्कं च, यच्छुष्कं तदाग्नेयं यदार्द्रं तत्सौम्यम् ॥ २३ ॥

(शतपथ ब्रा० १।६।३।२३ ॥

अथ यत्किंचेदमार्द्रं तद्रेतसोऽसृजत तदु सोम, एतावद्वाऽ इदं सर्वमन्नं चैवान्नादश्च, सोम एवान्नम् अग्निरन्नादः । (शतपथ ब्राह्मण १४।४।२।६३॥

अयाड् अग्निर्..... ब्रह्मवर्चसं तेनावरुन्धे । सोमस्यायाट् ..... क्षत्रं तेन (अवरुन्धे) । अग्नीषोमयोरयाड् .....इत्युपांशु अनिरुक्तं तेनावरुन्द्धेऽग्नीषोमयोरयाड् .....इत्युच्चैर् , निरुक्तं तेन (अवरुन्द्धे) अनिरुक्तं च वा इदं (जगत्) निरुक्तं च, तस्यैवोभयस्यावरुद्धयै ।...... यद्वै शुष्कं तदाग्नेयं, यद्धरितं तत्सौम्यं, शुष्कं च वा इदं (जगत्) हरितं च, तस्यैवोभयस्यावरुद्धयै ॥ (काठकसंहिता ३२।१॥)

द्विविधात्मक एव (लोक.) आग्नेयः सौम्यश्च ।

[सुश्रुत, सूत्रस्थान, १।२१(२२)॥]

डल्हणकृतटीका – अन्ये 'द्विविधात्मको द्विविधहेतुक' इति व्याख्यानयन्ति ॥ मिथुनं वा अग्निश्च सोमश्च .. अग्निर्वावेदं सर्वम् । आप ओषधया वनस्पतय । तदेव सोम । एतौ वै नो देवाना नेदिष्ठम् । (काठकसहिता ८।१०॥ कपिष्ठल) कठसंहिता ७।६॥

अग्नि सर्वा देवता, सोम सर्वा देवता (ऐतरेय ब्राह्मण २।३॥)

सर्वदेवत्यो वै सोम (काठ सं २७।१)

अग्नीषोमौ परमा काष्ठामगच्छताम् (परमा काष्ठा = अन्तिमसीमा = मूलतत्वम्) [तैत्तिरीय संहिता १।६।६।२]

अग्नीषोमौ देवाना मुखम्

[गोपथ ब्राह्मण, उत्तरभाग, १।२०॥]

राजानौ वा एतौ देवताना यदग्नीषोमौ ।

[तैत्तिरीय सहिता ७।६।२।१—७॥

अग्नीषोमयो प्रधानदेवतयो । [उव्वटकृत यजुर्वेदभाष्य २।१४॥]
अग्नीषोमौ प्रथमौ वीर्यण (तैत्तिरीय सहिता ३५।१।२॥
अग्नीषोमीयत्वाज्जगत [सुश्रुत सूत्रस्थान, ४२।६। (७) ॥]

[डल्हनकृता टीका—अग्निश्च सोमश्च योनिर्निगत इत्यर्थ ॥]
अग्नीषोममयं तस्माज्जगत्कृत्स्न चराचरम् । [महाभारत, नीलकंठी यटीकायुते शान्तिपर्वणि ३४१।५८—५६ ॥]

अग्नीषोमौ जगत् कृत्स्नम्

(महाभारत, कर्णपर्व ३४।४९॥)

Rudra is of the nature of fire विष्णु of the moon (agnimaya somatmaka) these two powers composing the world
8, 34, 49

(Epic Mythology by Hopkins, p p 218)

Agni and Soma being the ultimate elements of the whole world were so well known in Ancient India that even the later Sanskrit books of sectarian type have mentioned it frequently

अग्नीषोमात्मक विश्वम् .... ॥३॥
[बृहज्जाबालोपनिषत् २।३।]

श्री उपनिषद्—ब्रह्मयोगिकृत टीका—विश्वस्याग्नीषोम-कार्यत्वात् [पश्यत—ब्रह्माण्डपुराण, मध्यभाग ७२।५०॥]

अग्नीषोमात्मकं जगत् ॥४१॥ (वायुपुराण, उत्तरभाग, अ. ३५)
अग्नीषोमात्मकं जगत् ॥ (रामपूर्वतापिन्युपनिषत् ४।६॥ बृहज्जाबालोपनिषत् २।४॥ रुद्रहृदयोपनिषत् ६॥)

अग्नीषोमात्मकं चैव जगत् स्थावरजङ्गमम् (हरिवंश, १०, ६६६, see अग्नीषोम in St Petersberg Sanskrit Dictionary)

अग्नीषोमात्मकं विश्व जगत् [शिवमहापुराण, वायुसंहिता २५।२०॥]

The Two Asvins

They pervade everything with the attributes of rasa and jyotis Rasa is Soma and jyotis is Agni Hence the two Asvins are identical with Agni and Soma They are described as **chitrau** i e possessing different or opposite characters, as जगतो निधानौ i e a place of cessation or rest (ultimate elements) of the world, as सखायौ e friends or having attraction for one another and as विश्वस्य जगतस्पती i e the masters or cantrollers of the whole world

अश्विनौ यद् व्यश्नुवाते सर्वं, रसेनान्यो ज्योतिषाऽन्यः [निरुक्त १२।१॥]

रसः सोमः [शतपथ ब्राह्मण ७।३।१।३॥]
अयमग्निर् 'ज्योतिः' (यजु. १८।४०॥) [शतपथ ब्राह्मण ६ ४।२।२२]

चित्रौ [नानाविधौ—इति सायणः] जगतो निधानौ... .. सखायौ। तावश्विना...... [तैत्तिरीयारण्यक १.१०।२।]

निधानम्=आधारः, कार्यावसाने प्रवेशस्थानम्' [शब्दकल्पद्रुमकोष] ॥ a place where anything is placed;.........a place of cessation or rest [Apte's Sanskrit—English Dictionary]

अश्विना... ..विश्वस्य जगतस्पती। [तैत्तिरीयारण्यक १।१०।१॥]

Mitra and Varma Brahman and Ksatra

The whole world is maintained by Brahman and क्षत्र which are identical with Agni and Soma, or in other words, with Mitra and वरुण The whole world consists of two things only— Mitra and वरुण :—

तदेतद् ब्रह्म क्षत्रमग्नीषोमीय तेन जगद् धार्यते (महाभारत, कुम्भघोणसंस्करण, शां०, अ० ३६९, श्लोक ३१६")

ब्रह्म वा अग्निः क्षत्रं सोमः (कौषीतकि ब्राह्मण ६।४॥)

नाना व एतौ पुरा सोमा अगृह्णन् मित्राय वरुणाय च; ताः प्रजा अशान्ताः अविधृता अन्यान्यां प्रतीरच्चरंस्ते देवा अब्रुवन् सहेमं (ग्रहं मैत्रावरुणाख्यं) गृह्णाम, मित्रेण वरुणं शमयाम, वरुणेन मित्रम्" इति......ता इमाः प्रजा मित्रेण शान्ता वरुणेन विधृताः [काठ०सं० २७,४.]

इन्द्राग्नी [=ब्रह्मक्षत्रे । ब्रह्म=अग्निः । क्षत्रम्=इन्द्रः]

ब्रह्म चैवं क्षत्रं च सयुजा अकर्, यदग्निश्चेन्द्रश्च भूयिष्ठभाजौ देवताना, तस्माद् ब्राह्मणश्च राजा च भूयिष्ठभाजौ मनुष्याणाम् [मैत्रा०सं० ४,७,८]

ब्रह्मैव मित्रः [शतपथ ब्रा० ४।१।४।१।।]

क्षत्रं वरुणः [कौषीतकि ब्राह्मण ७।१०।।१२।८।।शतपथ ब्रा० ४।१।४।१।।]

द्वयं वावेदं (जगत्) ब्रह्म चव क्षत्र च (जैमिनीय ब्राह्मण १।७८।।)

(इन्द्र!) ब्रह्मणस्त्वा क्षत्रस्य चौजसे जुहोमि । तैत्तिरीय सं० ३,३, १,१—२

In the Nirukta VII 23 lightning (=electricity which is of two kinds) is called 'atmospheric fire' Similarly मित्रावरुणौ —the two basic elements of the material world are related to the atmosphere.

(देवा) अन्तरिक्षं मैत्रावरुणेन (आज्यस्तोत्रेणाजयन् । [जैमिनीय ब्राह्मण १।१०४।।]

Rayi and प्राण

The pair 'Rayi and प्राण' (which is also mentioned in the प्रश्नोपनिषद् I, 5—13) is related to or idential with Soma and Agni respectively —

रयिं सोमो रयिपतिर्दधातु । [तैत्तिरीय ब्राह्मण २।८।।१।६।।
प्राणो वा अग्नि. । [शतपथ ब्राह्मण २।२।२।१५।।६।५।१।६८।।]

The two prefixes 'आ' and 'प्र'

The whole world has been described as 'आ' and प्र .—

प्रेति (प्र+इति) च वा इदं सर्वं (जगत्) एति (आ+इति) च (जैमिनीय ब्रा० १।१८०॥)

सर्वं वा इद (जगत्) एति (आ+इति) च प्रेति (प्र+इति) (शतपथ ब्रा १४।१।६॥)

[1]Hari the two horses of Indra(=electricity)

All gods are (ultimately) Indra —

इन्द्र सर्वा देवता (शतपथ ब्राह्मण १।६।३।२२॥)

Aditi and her twofold character She is identical with प्रकृति (=matter) and her special connection with the number two is suggestive of her twofold character i e she is composed of only two basic elements

नित्यपक्षे (अदिति) अक्षीणा प्रकृतिरुच्यते, तद्विकार सर्वम् । [वररुचिकृत निरुक्त समुच्चय, कल्पे, ६, मंत्र ५ भाष्ये]

अदिति अध्यात्मपक्षे प्रकृति । (स्कन्द-महेश्वरकृते निरुक्तभाष्ये ४।२२॥

अदिति—आत्मपक्षे प्रकृति (देवराजयज्वकृत निघण्टुभाष्य ४।१॥)

अदितिर्हीदं यदिदं किञ्च (जगत्) (ऐतरयारण्यक ३।१।५॥)

अविज्ञाता (पशव) अदित्यै । (मैत्रायणी संहिता ३।१३।१०॥ अविज्ञात =अव्यक्त=प्रकृति)

द्वे शीर्षे प्रायणीयोदयनीये । (निरुक्त ८।३।७॥)

अदितिरस्युभयत शीर्ष्णी । सा न सुप्राची सुप्रती-चेधि (यजु० ४।१९॥

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[1]They will be dealt with and Indras identity with electricity and his twofold character will be proved in the next section (II) Also please see sections III — V

अदितिरस्युभयतःशीर्ष्णीत्याह यदेवादित्यः (=अदितिदेवताकः) प्रायणीयो यज्ञानामदित्यः (=अदितिदेवताकः) उदयनीयस्त स्मादेवमाह ।

(तैत्तिरीय संहिता ६।१।७।५।। पश्यत-मैत्रायणीस० ३।७।५)

पुनर्वसू (dual) नक्षत्रमदितिर्देवता (तैत्तिरीय)संहिता ४।४। १०।१।। तथा पश्यत तैत्तिरीय ब्रा. १।५।१।१ and ३।१।१।४।।)

अदितिसदो –हविर्धानाभ्याम् (काठ. सं. ६।१०)

Aditi has been mentioned to have brought forth 2 sons at a time, four times :–

सा (अदितिः) ऐक्षतोच्छिश (च्छिष्ट) ष्टं मे ऽश्नत्या द्वौ द्वौ (पुत्रौ) जायेते (मैत्रायणी संहिता १।६।१२।।)

तस्यै (अदित्यै) धाता चार्यमा चाजायेताम् .. ..मित्रश्च वरुणश्चाजायेताम् ..अंशश्च भगश्चाजायेताम् । .....इन्द्रश्च विवस्वांश्चाजायेताम् (तैत्तिरीय ब्राह्मण १।१।९।१–३।।)

एताभिर्वा आदित्या द्वन्द्वमार्ध्नुवन्–मित्रश्च वरुणश्च, धाता चार्यमा च, अंशश्च भगश्च, इन्द्रश्च विवस्वांश्च (ताड्य महाब्रा. २४।१२।४।।

Aditi (=प्रकृति=matter or nature) has been mentioned as one from which Soma came out.

अदितिः सोमस्य योनिः (मैत्रायणीसंहिता ३।७।८।।)

The deep dualism of nature which in later times assumed the character of bright and dark, nay of good and evil, was originally the dualism of day and night, of spring and winter, of life and death, and was naturally symbolized by the two ruling luminaries, the sun and the moon (Page 339)

'The sun belongs to Agni, the moon to Soma, the day to Agni, the night to Soma, the waxing half-moon to Agni, the waning to Soma (Page 338)

(Essays on Mythology and Folklore, by Max Muller)

प्रकृति or matter has also been mentioned as having two-fold character —

एतावद्वा इदं सर्वं (जगत्) यावद् रूपं चैव नाम च। (शतपथ ब्राह्मण ११।२।३।६॥)

द्वे वाव ब्रह्मणो रूपे मूर्तं चैवामूर्तं च, मर्त्यं चामृतं च. .. ... ॥१॥ तदेतन्मूर्तं यदन्यद्वायोश्चान्तरिक्षाच्च, तन्मर्त्यम् .... ॥२॥ वायुश्चान्तरिक्षं चैतदमृतम् .... ॥३॥ (बृहदारण्यकोपनिषदि २,३,१—३॥) In this passage Brahman is the name of प्रकृति, of which it is a technical name in the सांख्य system of philosophy :—

अव्यक्तस्यामी पर्यायशब्दा भवन्ति—अव्यक्तं प्रधानं ब्रह्म परं ध्रुवं तमः प्रसूतमिति (साङ्ख्यसंग्रहे तत्त्वसमाससूत्रवृत्तौ, पृष्ठ ११६)

II They (Agni and Soma and the two अश्विनौ which have been mentioned as the ultimate constituents of the world) are two kinds of electricity (negative and positive, because (1) they are related to Indra and are his powers, (2) Indra is the most powerful, and all powers belong to him (3) his twofold character or his special connection with the number 'two' is suggestive of his being (two kinds of) electricity (4) there are other proofs of his being identical with electricty We shall deal with these one by one

(1) Agni and Some and the अश्विनौ are related to Indra and are his powers —

ऐन्द्रः सोमः (तैत्तिरीय सं० ३।१।८।२।।)
(सोमः) इन्द्रस्य युज्यः सखा (तैत्तिरीय - संहिता १।८।२१।१।।)
इन्द्रः सोमस्य योनिः । (मैत्रायणी संहिता ३।७।८।।)
ऐन्द्रमेकादशकपालं पुरोडाशं निर्वपति
(शतपथ ब्रा. ५।३।१।१।।)
(अग्नीषोमौ) अस्मिन् (इन्द्रे) तेज इन्द्रियं ब्रह्मवर्चसमधत्ताम् ।
(तैत्तिरीय संहिता २।३।३।१-२।। cf मैत्रायणी संहिता २।१।४।।)
अग्नीषोमाभ्यां वा इन्द्रो वृत्रमहन्
(तैत्तिरीय ब्रा. १।६।१।६।।)
अग्नीषोमाभ्यां वै वीर्येणेन्द्रो वृत्रमहन् ।
(कठ. सं. २४।७।। कपिष्ठल कठ सं. ३७।८।।
मैत्रायणी सहिता २।१।३।।
मम वै युवं स्थ इति (इन्द्रो ऽग्नीषोमौ) अब्रवीत्—'मामभ्ये-
तमिति'..... (इन्द्र) ताभ्याम् (अग्नीषोमाभ्याम्) एतमग्नीषो
मीयमेकादशकपालं पूर्णमासे प्रायच्छत् । (तैत्तिरीय संहिता
२।५।२।३।।)
स वा इन्द्रः ......अग्नीषोमा ऽ उपमन्त्रयांचक्रे—'ऽग्नीषोमौ !
युवं वै मम स्थो युवयोरहमस्मि' । (शतपथ ब्राह्मणे १।६।३।१२।।)
युवं (=युवां) अश्विना ! (अश्विनौ !) इन्द्रं कर्मस्वावतम्
(आवतमपालयतं, स्वकर्मक्षममकुरुतम्)। [ऋ. सं. १०।१३१।४।।)
यजु० १०।३३।। महीधरभाष्यमपि द्रष्टव्यम्]। अश्विनौभा [उभौ
अश्विनौ] इन्द्र ! [त्वाम्] आवयुः [(तव) रक्षणं कृतवन्तौ (पुरुष
व्यत्ययः)]
(यजु० १०।३४।। उव्वट—महीधर—भाष्ये द्रष्टव्ये]
अश्विना ...... अस्मिन्नरे (यजमाने) इन्द्रियं धत्तमोजः
(तैत्तिरीय संहिता १।६।१२।४।।)

This passage is a, prayer to the अश्विनौ to bestlow, 'indriya' and 'ojas' upon the यजमान both of the qualities mainly belong to Indra, the very word 'indriya' is connected with Indra (see पाणिनि's अष्टाध्यायी V 2 93 ।), hence अश्विनौ also are his powers .—

(2) Indra is the most powerful, and all powers belong to him —

इन्द्रो बल बलपतिः । [शतपथ ब्राह्मण ११।४।३।१२॥]
या का च बलकृतिरिन्द्रकर्मैव तत् । [निरुक्त ६।१०॥]
इन्द्रो वै देवानामोजिष्ठो बलिष्ठः । (कौषीतकि ब्राह्मण ६।१४॥
इन्द्रौजसा पते । [तैत्तिरीयब्राह्मणे ३।११।४।२॥
इन्द्रस्य बलाय स्वाहा (काठ सं १४।८॥)

(3 and 4) क Indra is identical with electricity

(ख) He is especially connected with the number two, which suggests his twofold character [i e negative and positive],

I shall deal with these assertions, one by one —

क Indra is identical with electricity .—

(१) स्तनयित्नुरेवेन्द्रः । (शतपथ ब्रा ११।६।३।६॥)
(२) कतमः स्तनयित्नुरित्यशनिरिति (शतपथ ब्रा ११।६।३।६॥)
(३) यदशनिरिन्द्रस्तेन । (कौषीतकि ब्रा ६ ६॥)
इन्द्र=स्तनयित्नु=अशनि=इन्द्र ।
(४) विद्युद्वा अशनि । (शतपथ ब्रा. ६।१।३।१४॥)
(५) तेन हि वैद्युतेन ज्योतिषा वायरावेष्टितेन इन्द्राख्येन . ...
(निरुक्त २।१६ दुर्गाचार्य-भाष्य)
(६) In निघण्टु II 20 दिद्युत्, पवि,वज्र and कुलिश ।

are the names of Indra's weapon 'thunderbolt', which according to the 'Illustrated National Pronouncing Dictionary of the English Language is a shaft (or arrow) of lightning Hence Indra is identical with lightning = electricity Vajra is identical with vidyut (= lightning) according to the Kautsavya निघण्टु 54

Vajra = अशनि (See अमरकोष 1 50), and

In अमरकोष (I 1 50) ह्लादिनी is the name of Indra's vajra and in I 3 9 is the name of lightning, [अशनि]

अशनि = lightning and Indra, hence they are both identical See previous Nos (3), (4) and (6)

(7) In the Nirukta X—XI the atmospheric (madhyama स्थान deities are dealt with Among them Indra is dealt with in X 8

Also see कौषीतकि ब्राह्मण ५।४ - मध्यस्थो वा इन्द्रः ॥

The atmospheric fire is Indra = lightning —

आग्नेयेनास्मिॅल्लोके ज्योतिर्धत्त ऐन्द्रेणान्तरिक्ष इन्द्रवायू हि सयुजौ, सौर्येणामुष्मिॅल्लोके ज्योतिर्धत्ते (शत० ब्रा० ६।६।८ ३-४॥)

यथाऽन्तरिक्षे विद्युत् (शांखायनारण्यक ७।४। पश्यत—ऐतरेयारण्यक ३।१।२।

अग्निर्ज्योतिर्ज्योतिरिन्द्रो ज्योतिर्ज्योतिरिन्द्रः । सूर्यो ज्योतिर्ज्योतिः
—सूर्य सामवेद, उत्तरार्चिक, मन्त्र ११८१

यथा अमूनि त्रीणि ज्योतींषि यथाऽसौ दिव्यादित्यः .. . यथा ऽसावन्तरिक्षे विद्युत, .. यथायमग्निः पृथिव्याम् [ऐत्रा ३।१।२॥]

तस्य (विष्णोः=आदित्यस्य) त्रैविध्यमन्यथा वा । अग्नि—वैद्युतादित्यात्मना भुवि, खे, दिवि [ऋ. सं. १।२२।१७ भाष्ये स्कन्द स्वामी] तथा पश्यत—निरुक्तस्य (१२।१९) दुर्गाचार्य भाष्यं तैत्तिरीय सहिता (१।२।१३।१॥) भास्कर—भाष्य च ॥

स्तनयित्नरेवाग्निर्वैश्वानरः । तस्यद्यौस्समिद्, विद्युज्ज्योतिः... जैमिनीय ब्रा. १।४५॥

Agni वैश्वानर is mentioned in the Nirukta VII. 23 as 'madhyam' or atmospheric fire i e lightning (electricity)

(8) In the Nirukta VII. 23, according to a Rgvedic verse (I 59 6) it is mentioned that Agni वैश्वानर who is identical with the atmospheric agni or lightning (electricity) killed the demons— वृत्र and शम्बर Now it is well known that Indra is the main killer of these demons. वृत्रहन् (Killer of वृत्र) is a name of Indra (see Amarkosa I 142) For Sambara's being killed by Indra (See Rgveda III. 47 4 1. 54 4, I. 130 7. and VI 26,5) Hence Indra is identical with electricity

(9) In the later mythology also rain is said to be in the control of Indra (Vide श्रीमद्भागवत —II, 7 32 and वपतीन्द्रे ... III, 2 33) 'Meghavaban a, (or one whose vehicle is a cloudei, e lightning) is a name of Indra according to अमरकोष I, 1 47 Vidyut (lightning) has also been mentioned as giver of rain, hence it is identical with Indra —

विद्युद्धीदं वृष्टिमन्नाद्यं सम्प्रयच्छति ।(ऐतरेय ब्रा॰ २।४१) ॥

Also please see Nirukta II, 16

यत्ते अभ्रस्य विद्युतो दिवो वर्षन्ति वृष्टयः। (काठक सहिता ५ (अश्वमेध१।१२ ॥)

(10) The mytholog cal struggle between the God of lightning Indra and the serpent Ahi is transferred to Atar (the fire) [Vide page LII of the Introduction to the Zend Avesta, English translation by Darmesteter (S B E)]

(11) In the Vedic literature a thing mentioned synonymously with a deity at one place appears at another place as a separate thing related to or controlled by that deity (though figuratively) for example —

Indra and पूषन् are somewhere mentioned as synonyms of indriya (force) and पशव (cattle) respectively, but somewhere they are mentioned as their controllers —

इन्द्रियं वीर्यमिन्द्र । (शतपथ ब्रा २।५।४।६॥)

इन्द्रिय वै वोर्यमिन्द्र । (,, , ३।६।१।१५॥५।४।३।१८॥)

इन्द्रमूतय ऽ इतोन्द्रियवन्तमूतय इत्येतत् (इन्द्र =इन्द्रियवान्)। (शतपथ ब्रा ६।३।२।४॥,

पशवो वै पूषा । (शतपथ ब्रा ३।१४।९॥ ३।९।१।१०॥ ५।३।५।८,३५॥ तैत्तिरीय ब्राह्मण ३।८।११।२॥ ताण्ड्यमहाब्राह्मण १८।१।१६॥)

पौष्णाः पशव । (शतपथ ब्राह्मण ५।२।५।६ ।)

पूषा वै पशूनामीष्टे । (,, ,, ८।३।३।८।२॥)

Dozens of such examples can be given Similarly Indra, who is identical with अशनि and Vidyut = electricity is somewhere figuratively as the controller of the Vajra = Vidyut

(12) It has already been shown that all powers belong mainly to Indra they are somewhere mentioned as belonging (mainly) to vidyut hence Indra means Vidyut (electricity) —

बलमिति विद्युति । तैत्तिरीयारण्यक ९।१०।२॥)